business topics

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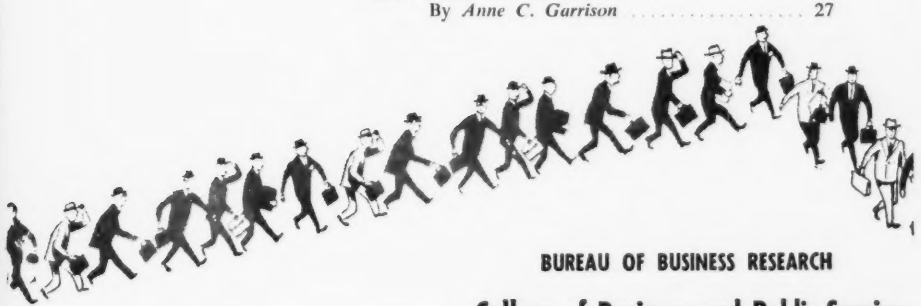

BUREAU OF BUSINESS RESEARCH
College of Business and Public Service
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PACKAGING RESEARCH AND M S U

An illustration of the effect interrellationship of industry and education, in the area of research, is to be found in the Packaging Research Laboratory of the Glass Container Manufacturers Institute, Inc., which recently moved from Butler, Pennsylvania, to Lansing. As the name implies, this laboratory, under the direction of Dr. John G. Turk, is devoted to research and development of the packing of glass containers. Since such packaging involves extensive use of fiberboard, the possibility of working in close cooperation with the University's Forest Products Department program in packaging was one of the primary reasons for the move to Lansing.

Dr. Turk has been appointed Lecturer at MSU, and will take an active part in the University's program in his field. On the other hand, two of Michigan State's students in packaging are being employed by the Laboratory. It is anticipated that graduate students may also work with projects of the GCMI Laboratory. In these ways a program mutually beneficial to industry and education is being developed. GCMI is currently carrying out other research projects at the University of Massachusetts, the University of California, and elsewhere.

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"Let your discourse with men of business be short and comprehensive."

(George Washington's *Copybook*).

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THE PUBLIC LIBRARY AS YOUR RESEARCH DEPARTMENT

By *WALTER E. FORSTER**

The Public Library is a familiar part of the scene in every community, yet its considerable resources in business research are capable of much more intensive use than they always get. The author suggests techniques for complete use of your library's business facilities.

"Boost your business by keeping informed; use your business library service" is the caption on a folder issued by one of the public libraries in Michigan. The availability of this service in communities throughout the state comes as a surprise to many people. Yet thousands of others have already discovered it and are using it regularly. You, too, may find that a careful and diligent search of the information available in your public library may solve your most complex business problems. Further, in a matter of seconds over the telephone, you may get the answer to routine questions.

"The library is as close as your telephone" is the motto of all public libraries throughout the state. In spite of widespread publicity, it is noteworthy how many people are not aware of this service as it applies to even one limited area, the furnishing of addresses from out-of-town telephone books. Almost daily someone will call, asking if the library has a certain out-of-town telephone book and whether he can come in and see it. Usually if we inquire further, we find that he wants only one address and has assumed that he will have to come to the library to get it. Another person will call and proceed to explain the emergency nature of his request for an out-of-town address; he will add that, in the past, he has always come to the library in order to get this information. In both cases, the caller is told that it is the established policy of the library to give addresses over the telephone from out-of-town directories.

What the Telephone Can Do

It is possible to call your public library and obtain the answers to a wide range of questions. Certain information lends itself very well to communication by telephone, i.e., dates, names of officers of a company, identification of trade marks, statistics, decoding of cablegrams, the meaning of abbreviations, and the translation of foreign commercial expressions. If the answer cannot be found readily, the librarian will record the question and call you back. Sample questions answered recently over the telephone in libraries throughout the state are: the agency which handles the advertising for the Grand Rapids Chair Company; the purchasing agent of the Kalamazoo Paper Company; the principal product of the Flint Steel Fabricators; the Michigan headquarters of the Brunswick-Balke-Collender Company; when to use figures and when to

*Mr. Forster is Chief of the Business and Commerce Department of the Detroit Public Library; his article is sponsored by the Michigan Library Association.

This article is based on information supplied by thirteen representative libraries throughout the state.

use words when writing numbers; the meaning of the German term "G.m.b.H."; bank holidays in Tangiers (this was complicated by the fact that French banks observe certain days in common); a translation of the French expression "accreditif"; the manufacturer of "Water Witch" outboard motor boats; and how much it costs to advertise in the periodical *Sales Management.*

Very frequently, librarians make an exhaustive hunt for elusive statistics. The majority are found but there are, of course, certain ones which do not turn up. In some cases, a reference is found to a printed source not in the library. These inquiries were answered recently: market quotations on London zinc prices; the gross national product for 1950 and 1955; the number of banking offices in the United States; soybean prices on the futures market; the cost of living in large American cities; the value of the French franc during the past twenty years; the number of people employed by the Jackson Paper Box Company; a list of the 100 largest manufacturers in the United States; the income per consuming spending unit for counties in Michigan; the high and low price of American Telephone & Telegraph Company common stock on October 6, 1939; the assets of the banks in Lansing; the number of electric ranges sold in Michigan in 1954; the length of time it takes to pay off a mortgage of $4,000.00 at 6% interest if the monthly payments are $37.00.

Directories Available. It has often been said that an accurate, up-to-date mailing list is the life blood of an organization. For the benefit of business groups, as well as for individuals, all public libraries have a directory collection; the number and variety, of course, differ from one community to another. For example, Grand Rapids has 116 telephone books, 107 city directories and many trade directories; Muskegon, 101 telephone books and 12 trade directories; Kalamazoo, 180 telephone books and 70 trade directories; Bay City, 207 telephone books and 33 trade directories; and Detroit, more than 500 telephone books and more than 500 trade directories.

Special directories have been compiled to cover many different business activities and lines of products, i.e., banks, insurance companies, chain stores, hardware wholesalers, security dealers, manufacturers in certain cities, states, and regions as well as for the entire United States; importers; real estate firms; advertising agencies; foreign manufacturers and a multitude of different lines of merchandise — hospital equipment, shoes, groceries, automobile parts, airplanes, coal, jewelry, furniture, stationery, and many others.

These directories are used a great deal both by persons coming to the library and by others who want only a few listings by telephone. The more common uses for these books are: to check names and addresses; to compile mailing lists; to obtain some details about a company; and to determine who makes what — whether it is a rubber, leather, plastic, metal, paper, cloth or wooden product. Most of these directories are concerned only with who makes what; however, some give names of officers, number of employees, and other company information. The Moody and Standard & Poor manuals, of course, give comprehensive financial data on the companies listed.

Specify Your Needs

"A man's judgment is no better than his information" is in the masthead of

the publication of one of the country's largest public libraries which emphasizes service to business people. Michigan librarians are equally eager to keep you well informed. In most communities, a telephone call to the local library will set the machinery in motion for a librarian to search for pertinent material to answer your inquiry — this may involve consulting reference books, periodicals, pamphlets, newspapers and newspaper clippings, encyclopedias, government documents, and special business, legal, and financial services. When making a request, it is helpful for the librarian to know who you are and why you are interested in the subject: be as specific as possible about your wants. This information will be useful in determining the amount and type of material collected or consulted. For instance, some persons want only references published in the last year or two; others want references only on developments in their own city or state. The person who is already a subject specialist in a field of knowledge would want material different from that useful to a beginner.

Recently, there has been a good deal of interest in locating material on company coffee breaks; absenteeism, supervisory training; specialized accounting systems; executive compensation; better business letters; American corporations with foreign branches; motivation research in advertising; security analysis; industry surveys; and compilation of mailing lists.

Sometimes the business librarian can direct a person to another local agency or office in order to locate material not available in the library. For example in Detroit there are frequent requests for financial data on local companies which are not included in the Moody manuals or Standard & Poor corporation records. Since all corporations doing business in Wayne County have to file an annual report with the Corporation and Assumed Names Department in the City-County Building, we find that many patrons find what they want through this referral. Other patrons want to know more about a person who lives outside the state than is given in the phone book. The additional information given in a city directory usually meets their needs. Since we only have city directories for certain places in Michigan, we suggest to these patrons that they try the local office of the R. L. Polk Company where a large city directory library is available to the general public. A similar situation prevails in regard to requests for other types of information.

Services vary The attention that the staff in a public library can give to any one patron or to any one question will vary from one community to another and will vary also from time to time in any one library. The staff of a public library has to serve the general public, so it is not always possible to concentrate indefinitely on the request of one patron when there are other immediate demands on staff time by other patrons coming to the library or telephoning. Also the staff is not always large enough to handle all the regular work of the library and in addition do research work for individual patrons. A survey of thirteen representative libraries throughout the state indicates differences in service policy. This is illustrated by the statements of the librarians in three cities in the 50,000 to 100,000 population range:

> "We do actual research work on about five business reference questions a week. By this I mean we spend from one-half to two hours on some research questions and many hours on others."

> "We do a considerable amount of actual research, up to and including a point of diminishing returns. Our service to business sometimes involves subjects far removed from business. For example, one executive who makes many speeches keeps his secretary and us busy looking up quotations and identifying poems which he recalls in part."
>
> "We do not consider ourselves a research library. I do not have the staff for such work. We do attempt to trace down material whether it be in our own library or through inter-library loan, but they must do their own work with the material provided."

These statements represent three approaches in which a person can use his library as a research department. First, he can phone the library and the librarian will either answer his inquiry by telephone or gather material together in the library where he can examine it and, in some cases, borrow it. Second, he can stop at the library or send one of his employees; the librarian will work with him or his representative in finding what is wanted. Third, he can stop at the library and do his own research. This procedure often works out best when the question is of a technical nature. For example, a patron called his local library and asked for material on a particular subject which might be found under six possible headings — spring-type clutch, spring-type coupling, wrapper-type spring clutch, wrapper-type coupling, one-way clutch, or one-way coupling. It was difficult to locate pertinent material in the indexes because of the many possibilities on clutches and couplings. While the patron tried to be as specific as possible, he didn't happen to give the exact terminology used by the indexes and it wasn't till he came in in person that he discovered a little of what he wanted under a seventh heading — friction clutches. He was able to search more competently than the librarian because he was more familiar with both what he wanted and the general subject. If neither the patron nor the librarian has time to make an exhaustive search on a question, certain communities have trained specialists who do library research on a fee basis.

Learning to Know Your Library

Business administration students may be introduced to their school library through either a tour of the library or a class in how to use the library. In most communities, a tour of the public library can be arranged — not just an inspection trip of murals, art objects, fancy leather bindings and general library procedures — but a work session in which you can learn the nature and scope of the collection; how it is cataloged and arranged on the shelf; the number of indexes and type of periodicals; the content of legal, investment, and business services; the extent of the pamphlet collection; and the range of government documents. Certain libraries have arranged tours for groups of people who were interested in becoming acquainted with business information sources.

If you are not familiar with the business information available in your own public library, stop there soon and introduce yourself to the librarian. He will welcome the opportunity to become acquainted with you and to discuss the library's resources and services. This contact can be mutually beneficial; you will gain a better understanding of what the library has to offer and the librarian will acquire an insight into what business people would like to have the library offer. This personal contact will also prove helpful to you whenever you telephone the library for assistance.

FOREIGN BUSINESS APPLICATION OF COMPUTERS

*By B. C. LEMKE**

Machines that think play an increasing role in the operations of American business. Here the foreign business use of such devices is surveyed.

A survey was made in mid-1956 to determine the status of the accounting uses of the electronic digital computer in Europe and to find out what kinds of computers were considered available for such use.

By "accounting uses" is meant the routine and repetitive use of an electronic digital computer to gather, compute, and supply information required at regular intervals for some integral or closely related part of the accounting system of a business. Use of the computer by governmental agencies for a similar purpose was not investigated, although such omission is not assumed to be particularly significant. An "electronic digital computer" is defined for the present purpose as an electrical system which can accept large volumes of data by means of punch cards, punched paper tape, or magnetic tape; store such data in appropriate parts of the system; modify and manipulate the data without human intervention or guidance in accordance with previously programmed steps of some length and complexity; and make the processed data available in a usable form. A further requirement for business and accounting uses is that the computer have sufficient (large) temporary and "permanent" storage or memory facilities, so the large masses of data and instructions can be fed into the computer and stored for use during operations as required; the term "general-purpose" is often applied to computers so equipped. The typical mathematical computations of the scientist and engineer can be performed by a general-purpose computer although only a limited portion of the memory facilities will ordinarily be needed. If only these mathematical computations are to be made by a computer, one specially designed for this purpose should be faster and more efficient than a general-purpose machine. Whenever the word *computer* is used in this paper it refers to a general-purpose electronic digital computer; obviously, the word computer is not subject to such restriction ordinarily.

*Dr. Lemke is Professor of Accounting, Michigan State University.

The Field of Investigation

Preliminary correspondence and inquiries, keeping in mind the foregoing restrictions, narrowed the field of investigation to Great Britain and France. Iron curtain countries were not included in the survey. The decision to limit the investigation to accounting uses is important because the computer has enjoyed general acceptance as an elegant method for relieving the scientist, the engineer, and, occasionally the businessman, of the tedium of seemingly endless mathematical computations. Thus computers for mathematical uses are found in many European countries, including Russia.

The active and some prospective manufacturers of computers were interviewed in England and France, and in most instances the manufacturing plants were visited; appointments were in part arranged before leaving the

United States. The adequacy of the coverage and, to a limited extent, the results obtained or conclusions arrived at were checked with interested governmental and business systems personnel in England.

Although a comparison with the progress and the relative status of computer affairs in the United States would appear to be a logical one to make, no such comparison is deliberately attempted. Because there are no important restrictions to the construction and merchandising of computers based on patents, entrance into the industry is not difficult. However, a manufacturer before committing himself to the production of these complex and expensive electronic devices, will first want to assure himself that a reasonably profitable market exists for the product. It was concluded, as a result of numerous conversations in Europe, that the urgency to speed up and automate acounting and accounting-related processes does not presently exist in Europe to the degree that it apparently does in the United States. The relative economy of pre-computer methods of data processing, ignoring the speed element, presumably shows up much better in Europe than in the United States. Factors such as the wage structure of the office force, the availability of acceptably trained employees, the cost of equipment, and the climate of competition as it relates to the urgency of supplying current data and improving services to customers, do not favor the adoption of the computer to the same degree as they often do in the United States. A realistic approach to the computer requires one to regard it as an alternative means of manipulating masses of data rather than as a revolutionary one. Thus the abandonment of a familiar and pre-existing method of data processing can be justified only if there is a clear-cut advantage in favor of the computer immediately, or in the near prospect. The cautious approach makes sense when the cost in terms of new equipment for a computer installation, and the disruptive and expensive revision of old procedures and the introduction of new, is compared with an uninterrupted continuation of established methods.

It is interesting to note that the scientific and mathematical use and development of the computer preceded the business use outside as well as inside the United States. J. Lyons & Company Limited in London decided some time ago that the computer, as represented by *Edsac I* then just recently completed at Cambridge University for use in mathematics, could substantially speed up and improve the coordination of the manufacture, delivery, and sale of food products, particularly perishable items, which form a substantial part of the Lyons tea-room and restaurant business. Difficulty was encountered in contracting for the construction of a computer at that time because no British manufacturer was as yet fully committed to the commercial production of computers: *Edsac I* was constructed in the mathematical laboratory of Combridge University largely out of World War II surplus components. Lyons went about to manufacture its own computer—*Leo I*—along the lines of *Edsac I*. *Leo I* thus is the pioneer electronic business computer. It is used for payroll and other related accounting purposes in addition to the coordination of food activities. Enough spare time is available on the *Leo I* to permit a heavy schedule of custom computation, mostly of a mathematical or scientific variety. *Leo II* is currently being introduced by Lyons for service center

use as well as for sale. It is the present intention to continue to operate *Leo I*. Although the successful production of a computer by the J. Lyons & Company appears to be an oddity because of its identification with food and restaurant operations, it is worth noting that the Lyons organization has in the past produced special equipment for its own use, and the construction of a computer was apparently taken in stride by its service and manufacturing departments. Other manufacturers of digital computers in Great Britain and France as of mid-1956, are either companies already firmly established in the production of electrical apparatus of some sort or are companies well known for the production and merchandising of punch card and related equipment.

The Lyons application, in spite of its success, was not immediately followed by accounting-related applications of computers in other companies in England. The reasons include the more insistent demand for special-purpose computers for scientific and engineering uses which could be more quickly satisfied by manufacturers because the design work for this type of computer was materially reduced through university and governmental construction of pilot models.

Present Business Interest in Computers

A large and growing interest in computers for business uses in England at the present time is evidenced by the fact that at least three manufacturers of computers have been conducting well attended instruction sessions of one or several weeks in length in which the business applications of computers and programming are taught, even before their computers were, or are, commercially available. The London Computer Group, which undoubtedly will grow into a national society, was organized some time ago with a vigorous and relatively large membership. Several conferences on computers, including some discussion of commercial applications, have been held in Great Britain. A booklet, *Wage Accounting by Electronic Computer*[1] was quickly sold out several days after it was put on sale making necessary at least one subsequent reprinting. A restrained optimism concerning the extent of the future use of computers in business was apparent in visits with the management of the companies included in the survey.

The direct interest of British governmental agencies in the promotion of all types of electronic computers is noteworthy. The booklet mentioned in the preceding paragraph was produced by the National Physical Laboratory which is actively interested in all phases of computer engineering and commercial applications. The technical staff of the National Physical Laboratory (which is somewhat similar to our Bureau of Standards) pioneered in the constructions of a computer called the *Ace*. The *Deuce*, a redesigned commercial version of the *Ace*, is manufactured by the English Electric Company Limited. The National Research Development Corporation has actively, although quietly, aided and promoted electronic computer design and application by sponsoring and inspiring various projects in the field, and by its licensing policy. The Corporation has

[1] *Wage Accounting by Electronic Computer*, Report No. 1 of the Inter-Departmental Study Group on the Application of Computer Techniques to Clerical Work, Department of Scientific and Industrial Research, National Physical Laboratory. London: Her Majesty's Stationery Office, 1956.

the broad duty of administering all patents resulting from activities of governmental agencies and services. It has made new ideas in computer technique available to industry as part of its operations. Experimental models of computers presumably largely for scientific computations are being constructed in the National Physical Laboratory, where a new *Ace* is being started; in Cambridge University, where an *Edsac II* is fairly far along in construction; and in London University where design experiments continue. Other governmental agencies have indirectly aided the development of computers by purchasing or leasing computers.

The computers presently available or under active promotion in England and France do not seem to include any "giants" comparable to the largest of the digital computers in the United States, although at least one company in England (Ferranti Ltd.) and one company in France (Société d'Electronique et d'Automatisme) are willing to build such equipment if a demand develops.

Shortcomings

It is noteworthy that multiple magnetic tape and multiple magnetic drum or disc storage design does not seem to have kept pace with other developments in Great Britain. This shortcoming in storage is noted in *Wage Accounting by Electronic Computer*[2] although in this citation, reference is made to only one of the several models of computers made in England. Work on magnetic tape components is in progress in most of the computer companies and some other organizations, but there has been some questioning, in the past particularly, of the need or advisability of using magnetic tape. The shortcomings of magnetic tape for storage, its major use, were sometimes mentioned in the course of the survey, such as the difficulties encountered in revising or sorting data presently on tape, the relatively slow access to information on the tape when a search is necessary, and the possible physical or electronic failure of the tape. On the other hand, paper tape development for use as input and output media has been aggressively carried on. Manufacturers, generally speaking, seemed to be engaged in an intensive investigation and analysis of business and accounting operations for the purpose of building up an adequate file of programs to fit existing computers or, alternatively, to design computers for maximum usefulness in these applications. With regard to the latter point, it is worth noting that exceptionally high speed in the basic arithmetic operations does not necessarily stamp a computer as best for accounting and business use.

Questions for the Future

As of mid-1956, the J. Lyons & Company Limited application was the only major application to accounting-related activities encountered in Europe which was in regular operation and not parallelled by a pre-existing routine as a comparison check. One other payroll application was being tested. On the other hand, the widespread study of systems and procedures as they apply to the computers of specific manufacturers and the fairly substantial placement of orders for such machinery seems to forecast a large number of installations in the next year or so. Many of these studies start with payroll and material control problems but are not limited to these two items. Whether the transition from pre-

[2]Paragraphs 70 and 71, page 13.

installation lay-outs and plans to actual routine operation will be accomplished more quickly and smoothly than in some American instances is therefore still to be revealed in the future.

Manufacturers

The commercial manufacturers of electronic digital computers in England and a brief description of some of the present or projected models follows. The list is regarded as complete, although there is always the possibility of the omission of a company which is preparing to enter the field. Non-British computers which may be marketed in England are not included.

1. *The British Tabulating Machine Company Limited, 17 Park Lane, London W 1.*

   This company is a major producer of punch card equipment and, until 1949, had an agreement with I. B. M. Its *HEC 2*, and the *HEC 4* which will supersede *HEC 2*, are designed to extend and supplement the existing punch card techniques. The memory capacity of the *HEC 4*, presently rather limited, will be expanded.

2. *Elliott Brothers (London) Ltd., Computing Division, Elstree Way, Borehamwood, Hertfordshire.*

   This company, largely identified with instruments and control mechanisms, began production of digital computers about 1952. Several scientific-type computers were manufactured, including one for foreign service; the current version is called the *Elliott 404*. The *Elliott 405* is specifically designed for business and commercial use. It is equipped to accept paper tape and punch cards input and to actuate several means of output including magnetic film. Magnetic drum, magnetic disc, and magnetic film are available for storage.

3. *The English Electric Company Limited, Control and Electronics Department, Kidsgrove, Stoke-on-Trent, Staffordshire.*

   This very large manufacturer has produced several *Deuces*, mentioned earlier. This highly regarded computer undoubtedly will be produced with auxiliary equipment, notably magnetic tape units, which should increase its effectiveness in the data processing area.

4. *Ferranti Ltd., Computer Department, West Gorton, Manchester 12.*

   This company is well known internationally for its electrical machinery. Its products range from massive power station equipment to consumer products. It has aggressively engaged in the production of computers in Great Britain and, in addition to the domestic market, has supplied a scientific type computer, the *Mark 1**, to Canada, Italy, and Holland. Production of its *Pegasus* model for commercial use is underway in expanded factory facilities in Manchester. Design work and construction of several other models is in progress. Paper tape is the present input media (the Fer-

ranti Tape Reader is frequently used with competitive computers), but magnetic tape and punch card input will be added in time. Output presently is also paper tape. Ferranti Ltd. also has produced a computer system for the automatic control of machine tools.

5. *Leo Computers Ltd. (a unit of J. Lyons & Company Limited), Cadby Hall, London W 14.*

The *Leo II* was in production in mid-1956 and scheduled for release shortly thereafter. Although detailed specifications had not been released as of mid-1956, the design is intended to reflect the experience gained from the use of *Leo I* in business applications.

Descriptive literature has been issued by the above companies. Sale and rental of computers are being actively promoted in England by these companies, with outright sale being preferred. It is likely that expanding production will cause systematic marketing efforts to be extended to Europe and the British Commonwealth nations. The United States may be included in the marketing area by one or more of the companies, in time.

The following companies were variously engaged in the design and construction of electronic digital computers, but have not released a commercially available model as of mid-1956.

1. *Powers-Samas Accounting Machines (Sales) Ltd., Powers-Samas House, Holborn Bars, London EC 1.*

This company is a major producer of punch card equipment, and its *PCC* (program controlled computer) is designed to complement such equipment. The present specifications provide for the use of interchangeable program boards which automatically sets an upper limit to the program steps that can be accommodated.

2. *Decca Radar Limited, 1-3 Brixton Road, London SW 9.*

The Decca *C1* Computer, for use in scientific and mathematical activities, and possibly a *C2* for business and accounting uses, will use magnetic core assemblies instead of the familiar electronic tubes in the computing circuitry. The specifications for the proposed *C2* had not been released as of mid-1956.

3. *Electric & Musical Industries Ltd., EMI Electronics Division, Blyth Road, Hayes, Middlesex.*

This company is an important producer of phonograph records and sound reproduction devices as well as commercial television, radio, and other electronic apparatus. This company also produces a machine tool control system. It is in the process of designing an electronic digital computer which will achieve its maximum efficiency and usefulness in specific accounting and business uses.

4. *Standard Telephone and Cables Limited, Connaught House, 63, Aldwych, London WC 2.*

This company manufactures components of a telephone system. It produced an elec-

tronic digital computer to spare its staff the tedious task of making lengthy sequential mathematical computations in connection with systems work. The company is building a computer for the postal system of a foreign country and at mid-1956 was in the design stage of producing a general-purpose computer.

5. *The Plessey Company Limited, Ilford, Essex.*

This company is rumored to be designing a computer for payroll applications.

The French scene is likely to be dominated by the Compagnie des Machines Bull. This company, in the forefront of punch card machinery manufacture in continental Europe, has bridged the gap between traditional punch card equipment and the computer with its *Gamma 3B* unit which, in mid-1956 was being equipped with a magnetic drum so that it now fits into the somewhat arbitrary classification of a computer; the unit without a drum has been available for some time and is extensively used in Europe.

The Société d'Electronique et d'Automatisme, a private company, is engaged in the production of various electronic devices, including the design and construction to specification of general-purpose electronic digital computers equipped with magnetic drum and magnetic tape units. One of the projected business applications will be to sales analysis of a leading French soap manufacturer which was described at the International Congress on Automation held in Paris in June, 1956.

Competition for a share of the European market by American companies is presently complicated by the monetary exchange problem if machines must be imported from the United States. This complication can be overcome substantially by manufacturing American designed computers in factories located in Europe, and this seems to be under way. Since some American punch card and accounting equipment is already so produced, it seems to be a logical step to make American computers available in the same manner.

The marketing of computers poses a problem for companies not previously identified with the office machinery industry. It is interesting to note that a marketing agreement between Elliott Brothers (London) Ltd., producers of the *Elliott 405*, and the National Cash Register Company in England was announced in London newspapers in mid-1956. Presumably paper tape produced by basic NCR office machines will be used as input for the *Elliott 405* in companion installations. Other types of agreements were also noted. The Powers-Samas Accounting Machines (Sales) Ltd. is collaborating with the Ferranti Ltd. to develop further computer systems employing a variety of input-output media. The Compagnie des Machines Bull and Olivetti, of Italy, have formed a marketing company, the Olivetti Bull, S. p. A., presumably limited to Italy. The British Tabulating Machine Company Limited and an American company are participating in the production of a large multi-drum computer.

The general conclusion can be drawn, from observations and discussions in England and parts of Europe, that the various steps in the creation of a variety of data processing systems using the electronic digital computer as the central unit have progressed to

the point where the availability of computers alone may determine when, where and, in part, how many installations will be added to the few accounting-oriented ones presently in some stage of operation.

SI QUAERIS . . . .

For a long time now we have been trying to draw up a history of our state motto: *Si Quaeris Peninsulam Amoenam, Circumspice.* A fine motto, for it is indeed a Pleasant Peninsula (or two), this state of ours, and the more we Look About Us the better we like it. But where did this motto originate? It was adopted for the state under the governorship of Lewis Cass: where did it come from?

Obviously it is modeled upon the epitaph of Sir Christopher Wren, the architect of St. Paul's Cathedral, London. His successor in the office of Surveyor of the Cathedral, Robert Mylne, had these dignified words carved over the entrance to the choir, in honor of Sir Christopher: *Si Monumentum Requiris, Circumspice:* If you desire a monument, look about you. But where, in turn, did Mylne get these words? As a classical student, he might have made them up; or he might equally as well have found them in some such writer as Seneca. Our research project breaks down at this point, and we close with an apologetic Late Latin motto of our own: *Si Quaeris Quamlibet Notitiam, Circumspicisce, Sed Eam Iamdudum Non Rescisces,* which means: If you want a particular bit of information, keep on looking for it, but you still may not find it.

LAND USE CHANGES LINKED TO HIGHWAYS

*By FRANK W. SUGGITT**

Our highways will have greater expansion in the next five years than ever before. What this means for land users is a subject of widespread concern.

There is the inevitable pressure upon farmland as urban and suburban population and demand for space continue to expand. It is hoped that by more fully understanding the nature of the pressure upon farmland, the situation can be met objectively as a phenomenon of the time, rather than with an emotional approach which is tied to the conventions of a quarter of a century ago.

A major bias of this paper is that exogenous, or "off-the-farm," forces are exerting greater influences upon "on-the-farm" managerial decisions than are those factors which are under the exclusive control of the farm operator. First on the list of these exogenous forces is the continued dominance of urban and urban-related populations, as they affect rural land values, land uses, and the opportunity for part-time and full-time off-the-farm employment. Closely associated are the influences of greatly improved highways which lay open vast areas of rural land and make them economically desirable for urban-like uses. In this connection, it is interesting to note that the new Federal-aid highway program entails the construction of 33,000 miles of new, four-lane, limited access highways, most of which will be on rights of way yet to be acquired. These highways will consume approximately 1,815,000 acres, or the equivalent of more than 11,000 farms of 160 acres each. Yet the greatest land use resulting from these highways will be to render remote farming areas accessible for commuters, industrial development and other nonfarm uses. Decisions on the part of industrialists and of the government to decentralize and disperse industry can shatter the existing pattern of land values, land uses and employment characteristics far from a major city. Finally, brief mention must be made of off-the-farm policy decisions as they pertain to production allotments, acreage reserves, subsidy and credit policies, reclamation, tariff, freight rates and so on, for these can and do have profund effects upon agricultural land use and managerial decisions.

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Nature of Land Use Changes

Changes in land use, for the most part, are characterized by changes in the intensity of use. The two obvious directions of use-intensity changes are represented by reversion of cropland to extensive grazing, forest or recreation on the one hand, and second, the conversion of land to more intensive agricultural uses and to urban-type uses characterized by a higher population density.

During the past 15 years, 17 million acres, or about five percent of the nation's total cropland, has been converted to other uses. Of this total, about three-fifths has gone into private nonfarm developments and the other two-fifths into public nonfarm uses. This means that since 1942 the equivalent of 135,000 average farms and ranches have been converted to residential, commercial and industrial uses and 90,000 farms and ranches have been absorbed by highways, airports, parks and other public uses.

Basis of Land Use Changes

The most obvious explanation for an intensification of land utilization is the growth of population and the increasing demand for food, fiber and space. In simple terms, there were about 11 times more people per square mile in 1950 than in 1790, and the population density has doubled just since 1900. The number of acres of cropland per person has been halved during the first half of this century. Improved technology in agriculture has permitted more people to be fed better from only a slightly larger acreage by producing more per acre, with still a substantial stock pile of surplus farm products. How long this can continue is beyond the scope of this paper, although there is every indication that surplus rather than inadequate food supplies will be the most trying agricultural problem for at least the next two decades.

Conversion of farmland to other uses would be relatively slight and easily contained if total population growth were the only factor involved. Actually, the demand placed upon land for nonfarm uses is compounded by basic changes in the characteristics and habits of our population. By 1900, when the western frontier was virtually gone, farm population stood at an all-time high, and cities were absorbing surplus farm youth at a rapid rate as the Industrial Revolution gained momentum. Cities were forced to expand and annex rural territory as the farm-to-city migration continued and as the demand for fabricated products soared. Since the turn of the century mechanization in agriculture has continued to force farm workers into non-farm employment at a rapid rate.

However, it was not until the advent of almost universal ownership of individualized transportation that the growth of the nonfarm population exerted its greatest influence upon rural land use. To be sure, mass transportation, especially in the form of commuter trains, left an indelible mark upon former farm areas by causing satellite communities to develop as bedroom appendages to the larger urban centers. The automobile, however, has freed the urban worker from living within walking or streetcar distance of his job. In a survey of 18,000 people buying new cars in 1954, 88 percent said that they used their cars as a regular means of getting to and from work. Of all automobile trips made in the Detroit Metropolitan Area on a typical weekday in 1953, two-thirds of the trips were for the purpose of traveling to home or to work.

The modern metropolitan type of development would not have occurred in its horizontal form had it not been for the automobile. By the same token, failure to provide for efficient employment of automobiles in these same metropolitan concentrations is a major factor in accelerating the decentralization of industry, commerce and residence into the rural hinterland. As traffic congestion and land values rise due to mounting densities in the older parts of the cities, both industrialists and workers welcome the opportunity

to locate in a rural community. Increasing mobility of the population, along with shorter working hours and more income, encourages workers to look further and further from their place of employment for residential and recreational space.

Metropolitan Magnitude and Influences

More than half the population of the United States resides within the 168 standard metropolitan areas, and over 97 percent of the nation's increase in population between 1950 and 1955 took place in these metropolitan areas. To illustrate the importance of this, in the state of Michigan 17 out of a total of 83 counties contained four-fifths of the total state population and accounted for nine-tenths of the state's population growth between 1950 and 1955.

Three phases of metropolitan and urban growth are of interest from the point of view of land utilization. First is the territorial expansion of the older central cities. In 1955, according to the International City Managers Association, 526 American cities annexed nearly 223,000 acres for an all-time high. Thus the equivalent of 1400 farms of 160 acres each passed from rural to city administration. Annexation of densely populated areas contiguous to cities has not progressed nearly as rapidly as principles of planning, administration and economics would indicate, and the failure on the part of cities to absorb their suburban offspring has added to the tendency towards scattered subdivision formation and has aggravated the fiscal problems of rural people in rural units of government.

A second and more startling aspect of metropolitan growth is suburbanization. The suburban portions of the 168 standard metropolitan areas comprised 42 percent of the total metropolitan population in 1950, and accounted for 61 percent of the metropolitan growth between 1940 and 1950. The United States Bureau of the Census projects a 20-year population increase of 38.3 million in the suburbs, 8.2 million in central cities, and 16.8 million outside the major metropolitan areas. In the next 20 years 61 percent of the total population increase will settle in the suburbs, to continue the trend of the past 15 years. The only place for these haphazard suburban areas to expand is outward from the cities. Farms in the path of this pressure must yield to more intensive uses, and the farm which is surrounded by suburban development faces a tragic future.

The third phase of population growth, less obvious and less spectacular than metropolitan and suburban expansion, is the continued dispersion of rural nonfarm residents throughout rural farm territory. This, like suburban swelling, is the direct result of improved transportation and mechanization which have distinguished the trends of the middle third of the twentieth century. First, with improved agricultural technology, it has been necessary for some farmers to expand the scale of their operations while others become week-end and evening farmers and commute, over good highways, to urban-based employment. Farm homes which remain in the wake of farm unit consolidation are occupied by people with stronger economic ties to the city than to the country. At the same time, city workers are able to leap across the tangle and turmoil of city and suburban living and can establish new homesites in what was previously a rural agricultural area. At former crossroad trading centers, new homes

and commercial establishments are forming the nucleus for new, scattered, suburban-type developments. With present highway facilities, no farming area within 50 miles of an expanding nonfarm employment base is immune from this dispersed, checkerboard, leap-frogging type of development. As highway facilities are improved and time enroute is reduced, the circumference of city influence upon rural areas will widen.

Recreational Demands Upon Land

The growth in the importance of recreation in America closely parallels the transition from a muscle to a machine economy. It is a counterpart of the shift from rural agricultural to nonfarm industrial society. Just as the increase in leisure time, disposable income and improved transportation have brought about residential, industrial and commercial pressure upon rural land, they have also increased the desire and ability to partake of more recreational opportunities. The one is a part of the other. Extensive areas are being acquired in the proximity of metropolitan areas for parks, playgrounds, water sports, hunting, fishing, field trials, nature study and the like. These kinds of recreational land uses, within 50 or 60 miles of a sizeable city, can command higher prices at the market place than most agricultural land. The demand for close-in recreational lands is far ahead of the present supply, and it is only a matter of time before huge sums will be made available to provide for this much-needed relief valve in our high-pressure system.

More remote recreational areas are in ever-increasing demand for more extensive uses such as hunting, fishing, sight-seeing and wilderness-type pastimes. Fortunately most of the later demands are not in competition with agricultural land use. In fact, these kinds of recreational development augment adjacent farming areas by providing new employment opportunities for surplus farm youth, new market outlets for agricultural products, and new sources of taxable property to share in the costs of local government. A serious problem arising in the more remote forest-recreation areas is the persistent demand for individual and group ownership of hunting and fishing grounds. With more abundant income and faster transportation, many urban people desire exclusive use of such areas, whereas the aggregate recreational carrying capacity would generally be greatest under public ownership. In many highly developed resort and recreation areas the increasing densities of cottages and commercial establishments are creating urban-like problems such as are occurring in rural subdivisions in the proximity of large cities. Here too, the local units of government are ill-equipped to administer such new functions as land use planning, subdivision control, traffic, water supply, sewage disposal, fire and police protection and all the other functions of an urban community.

Looking Ahead

The changing occupational and residential pattern of America's expanding economy continues to be reflected in land use conflicts and in administrative processes which are far behind the rate of environmental changes. It is predicted that if recent trends continue the present farm population of 22.2 million will be reduced to 15.3 million by 1975. In 1950 farm people comprised 13.5 percent of the nation's population, but in 1975 it will be reduced to

about 6.8 percent of the total. Total population will increase by 38 percent, yet 85 percent of the increase will take place in the suburbs and only 15 percent in the central cities. The living pattern of the American people is undergoing a basic change, yet there is little evidence that adequate steps are being taken to smooth the transition and to reduce the conflicts and contradictions.

The era of automation, whereby man's labor productivity is increased by the substitution of electronic impulses for thought processes, promises to be even more revolutionary than was the substitution of mechanical power for muscle power. This will be reflected in even more leisure time and disposable income which will accelerate the trend toward suburban and rural residence and recreation. The development of atomic power promises the possibility of freeing industry from sources of conventional hydro and thermal power and will permit industrial decentraliziation and development virtually any place. New systems of rapid mass transit must be devised to combat current vehicular congestion and this can hasten the suburban encroachment upon the rural hinterland.

These trends and possibilities present opportunities and obstacles to the nation's agricultural industry. Expanding population and significant shifts in income distribution and consumption habits assure an increasing demand for the products of agricultural land. Expanding employment opportunities in industry and in the service and professional occupations provide an excellent outlet for surplus farm people. As farm mechanization and consolidation continue, the number of workers needed in agricultural production is reduced, and theoretically, this means that fewer shares need be taken from a larger agricultural output, thus increasing the size of each share. Recent history and present projections point to the necessity for agricultural leaders to bend their efforts toward accelerating these trends rather than toward preserving what they remember as the family-sized farm of a generation or two ago.

It is contended that the trends toward relatively more people employed in non-farm enterprises and the accompanying trend toward urbanization can be utilized as one of the most promising aspects of agricultural development. Dispersion of industrial and service establishments and enhancement of recreational land use can hasten the transfer of under-employed and under-capitalized farm people and farm lands to more productive employment. Realization of this fact should result in public programs which will speed up the transition rather than futilely attempt to impede the inevitable.

The Need for Planning

Renewed energy must be given to land use planning activities, especially in tension areas. More complete land and water inventories and studies are needed to guide communities, highway planners, industrialists, land developers and public agencies. Every effort should be made to direct non-farm uses of land to sites that are less favorable for farming, yet it should be borne in mind that it might be more economical and socially more desirable to reclaim new farmland in areas more remote from urban and recreational pressure. New administrative and fiscal arrangements are necessary to assure continuation of farming in tension areas where it is socially desirable to maintain agriculture. New systems of zoning, taxation, subdivision regulations and direct

subsidy will have to be devised if agricultural lands are to resist urban encroachment within the wide orbit of urban influence. The only alternative to such subsidy is to vastly increase the intensity of agricultural land use in such areas so that agriculture can outbid the price offered by pressing nonfarm uses.

Rates, directions and character of urban advance must be plotted so that plans can be cooperatively developed for utilizing land and water resources most advantageously, with the minimum of sacrifices and hardship. Only then will it be possible to delineate an area and dedicate it for agricultural use and to focus every available means upon increasing the productivity and profit of that use. Only then can a farm planner, an extension agent, a vocational agriculture teacher or a credit representative know that his energies will not be wasted by the subdivision of a farm the day after he finishes giving assistance on that farm.

Soil conservation experts, local planning groups, Chambers of Commerce, and others can be key leaders in the development of the necessary land use plans and dedications of land use. They possess the combination of technical skill and grassroots cooperative leadership which is vitally needed. Their energies, coupled with those of other agencies, organizations and units of government can resolve order out of the chaos and speculative panic which enshroud every urban center and extend far out into the rural hinterland. They, above all others, must be encouraged to better understand the basic changes in America's employment and occupance pattern and to better appreciate major regional shifts in population and land use. Armed with this kind of knowledge, local people in local areas must develop plans for the direction of land use changes. These local plans must be integrated with one another into broader area plans which are sufficiently comprehensive to give positive guidance to new land use developments.

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THE ROAD AHEAD: INFLATION OR DEFLATION?

By *DICK A. LEABO**

The nation seems to be in economic cross-winds at this point. The author diagnoses the type of inflation that may be prevailing and suggests some forces to keep your weather eye on.

". . . business and labor must use wisdom and self-restraint to help curb inflation."

". . . in 1956 roughly half of the increase in that gross national product came from a markup in prices."

". . . unless we change some of our ways, we will see a depression that will curl your hair."

Official pronouncements like these indicate the concern over one of the problems facing us today — inflation. What is this peril? Can we have full employment in our economy and still have *relatively* stable prices?

Introduction

The primary objective of this article is to answer these questions in terms understandable to the lay person. In addition, some of the causes of both inflation and deflation are examined, and some pertinent business indicators are checked for possible signals of the level of future business activity.[1]

The economists define inflation as that situation existing when there is an excess of effective demand above the level required for full employment of our resources. The converse would, of course, be deflation. That is, an effective demand below the level needed for full employment results in unemployment of our resources. These twin perils of our economic system, inflation and deflation, are the consequences of a failure to bring about accord between the objective of full employment and *relatively* stable prices with effective aggregate demand.

Types of Inflation

Perhaps it may be well to distinguish very briefly among three types of inflation. First, *war inflation* is brought about by increases in the total national output(gross national product, GNP) at a faster rate than the output of consumer goods. As consumer incomes rise, *e.g.*, through higher wage rates

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[1]The reader interested in more detailed statements on this subject of inflation and related topics is referred to, among other books, the following: Neil H. Jacoby, *Can Prosperity Be Sustained?*, (Henry Holt and Company, New York, 1956); John Maynard Keynes, *The General Theory of Employment, Interest and Money*, (Harcourt, Brace & Company, New York, 1936); A. H. Hansen, *Economic Policy and Full Employment*, (McGraw-Hill Book Company, Inc., 1946, New York); Seymour E. Harris, *Inflation and the American Economy*, (McGraw-Hill Book Company, Inc., New York, 1945); Abba P. Lerner, *Economics of Employment*, (McGraw-Hill Book Company, Inc., New York, 1951); and Richard V. Clemence, *The Economics of Defense*, (The Stackpole Company, Harrisburg, Pa., 1953); Albert G. Hart, *Defense Without Inflation*, (Twentieth Century Fund, New York 1951).

and overtime pay, faster than the flow of consumer goods, prices shoot upwards. The shifting of production from consumer goods to defense materials increases this shortage of consumer items and tends to magnify the pressure on the price levels. Unless some measures are taken, *e.g.*, price and/or wage controls, rationing, etc., wartime inflation can force prices to extreme heights. The extent of the inflation is geared, to a large degree, to the magnitude and duration of the garrison-type economic effort.

Second, *peacetime* (or possibly postwar) inflation is probably a characteristic of prosperity. New investment tends to increase our national income and the flow of personal income to the household sector of our economy. As consumers have more income to spend[2] (and *perhaps*, easier credit sources) the consumer goods price level begins to rise. If investment tapers off and the output of consumer goods increases at a faster pace than gross national product, such inflation gives little cause for concern, particularly if productivity rises faster than wages and costs of raw materials.

Third, the *cost push* type of inflation is the final one to be discussed here. This is the kind currently exerting inflationary pressures on our economy. Wage boosts, raw material price increases, and increased markups are some of the forces which tend to add to the cost-price spiral. Workers are attracted to higher paying mobilization jobs from consumer goods production. This creates the situation where civilian goods industries, in an attempt to hold their workers, grant wage increases, too. This, adding to the personal income flow, and increasing consumer spending (at the same time possibly reducing the *relative* outflow of consumer goods) edges prices upward.[3] Finally, there is a natural tendency (during a boom) in our economic system to pass these price increases on to the consumer in the form of higher price markups. In addition, escalator clauses in wage contracts (where the wage scale is tied to the cost of living) tend to add to these pressures. That is, as the cost of living rises through increased price markups, etc., automatic wage rises follow. Also, "cold war" military expenditures tend to push up prices of raw materials and wage increases are frequently a reflection of these defense pressures.

Is Inflation Inevitable?

Whether or not inflation, or deflation for that matter, is inevitable in our economy is a moot point. In fact, some leading economists have taken the position that a little inflation is not necessarily an evil.[4] They argue that as long as productivity increases at a more rapid rate than wages and costs we have nothing to fear.

Therefore, it seems possible, too, that we may have full employment and *relative* price stability. The original impetus to inflation may stem from excessive effective demand or from cost push pressures. However, the federal government does have power to control the money and credit supply, the

[2]A backlog of consumer demand created by wartime shortages and rationing, plus funds available through "forced" savings tends to add to postwar inflationary forces.

[3]When consumer goods output fails to maintain its *relative* relationship to total output of the economy, we create an inflationary gap. That is, consumer income exceeds the current value of the consumer goods production.

[4]One problem which must be resolved is: "How 'little' inflation is OK?" Because any amount of inflation will change the price relationships, and *uncontrolled* inflation will distort the whole price-market mechanism, this becomes an important question.

amount of tax collections (which influence effective consumer demand), and it also can adjust its own expenditures so as not to exert undue pressure on the available supply of our output and thereby force prices higher. The timing of these actions is, of course, of extreme import.

The Present Situation

Are we headed for another round of price increases and more inflation? Or are we likely to have deflation later this year? No doubt some evidence to support both contentions can be gathered.

Actually, the federal budget today is *deflationary* in nature rather than inflationary. The cash budget during the most recent fiscal year had a surplus of approximately $5 billion. The present fiscal year ending in June, 1957, should also produce a surplus. This, naturally, acts as a brake to consumer spending (and inflation) because the federal government is withdrawing more from the income stream than has been added. One may contend that the nature of the government's expenditures is such that even though on the surface, a surplus is deflationary, primarily defense expenditures add to "cold war" inflationary forces largely because of the size of the budget (over $72 billion).

Another source of control — credit and money supply — has not added to inflationary tendencies recently. In fact, the Federal Reserve Board "tight-money" policy *probably* has been deflationary in nature.[5] It would appear that two sources which could add to effective demand — federal deficits, and large increases in the supply and velocity of money — are either neutral or actually deflationary.

Some other indications of possible deflationary forces can be found in the stock market (down 15 per cent from its peak); business inventory accumulation has been declining; consumer resistance in the durables (TV and auto sales have been below expectations); residential construction has lagged behind 1956 levels; business failures in 1956 were at the highest level since prewar 1940; average weekly factory hours and pay have been off since December; manufacturers' new orders for durable goods have been down; and unemployment is over 2.9 million — up 461 thousand since December.

However, wholesale prices have continued to rise since late 1955. (4.6 percent from December, 1955 to January, 1957). While the rise has been moderate, consumer price increases frequently follow close in hand. (The consumer price level rose approximately 3 percent in 1956.) It should be noted that prices of raw materials (steel, rubber, cotton, etc.) usually rise rapidly during periods of anticipated inflation. In addition, farm prices have shown signs of continued recovery.

Business expenditures for plant and equipment have been at a high rate recently; however, there are signs that some businessmen are modifying their expansion plans. Labor costs have been upward, too; in fact, costs have risen faster than productivity. Other indicators pointing upward include industrial production, electric power output, demand deposits, consumer credit, and commercial bank loans. And per-

[5]If higher interest rates have not actually *increased* capital expenditures in anticipation that money costs are going still higher, then a "tight-money" policy is deflationary. If the reverse is true, then such action *may* even be *inflationary*.

Recently, the velocity of money and bank deposit activity have been rising, therefore, adding impetus to inflation.

sonal income has been at an all-time high, too.

Will these forces lead to a new inflationary spiral or will they result in a recession?[6] Is the "issuing [of] moral pleadings to labor, management, and consumers to restrain themselves" adequate governmental action at this time? Or does the situation demand more active fiscal and monetary policies? From all signs, the performance of the economy warrants close watching during the months ahead for further signals of *both* of these twin perils.

[6]Possible developments in international affairs also should be closely watched at all times. For example, sudden changes in the Middle East situation could upset any economic forecast.

A national debt, if it is not excessive, will be to us a national blessing.

Alexander Hamilton, *Letter to Robert Morris,* 1781

The love of liberty is the love of others; the love of power is the love of ourselves.

William Hazlitt, *Political Essays*

I know no method to secure the repeal of bad or obnoxious laws so effective as their stringent execution.

Ulysses Simpson Grant, *Inaugural Address,* 4 March, 1869

SOME COSTS ASSOCIATED WITH EMPLOYMENT IN BRAZIL

By *STANLEY E. BRYAN**

"The cost of labor" can be an ambiguous term, as is well illustated by this account of such costs in Brazil. An economy undergoing rapid development forces upon employers consideration of relative costs of "cheap" manpower and expensive machinery.

Are your labor costs too high? How about paying 22¢ per hour? That's the approximate rate per hour in Brazil. In Brazil you could have someone who did nothing but drive your car, keep it clean, wait for you when you went somewhere on a business conference. You could have a porter who did little more than open and close your office door. You could have all types of miscellaneous people around your office or factory not assigned to any job in particular. Your wife could have several maids and a handyman. Labor rates are relatively low in Brazil for unskilled workers.

Equipment Cost of Prime Importance Now

At this stage of the development of a business economy in Brazil most Brazilian business men think that their big problems are not related to labor costs but rather to the cost of capital equipment. The machines and equipment that they desire to acquire are extremely expensive. Once they acquire it, a piece of equipment might stand idle much of the time. The reasons for its idleness might vary. Lack of balance among types of equipment, lack of an operator who knows how to operate it, lack of materials, or lack of a market for its products are all reasons for an idle piece of equipment or an idle machine.

In a country where the rate of depreciation is less than the rate of inflation and where machinery is very costly other interesting reasons can be found. Instead of trying to "beat the machine to death" to get it to pay for itself out of its productivity a Brazilian business administrator often will let such a machine stand idle, conserving it for the future. The machine will be worth too much intrinsically to subject it to the wear and tear of a grueling production schedule.

The owner of equipment seems assured of financial success in Brazil through the appreciation of capital equipment values. Labor productivity suffers because the machines are conserved, but the machines increase in value. The big problem, then, appears to be to obtain the capital with which to purchase equipment in order to benefit from this process.

In the meantime, however, the costs of labor are increasing. Not only are the direct money costs increasing. The indirect costs of labor are increasing too.

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Costs Associated With Employment By Law

Beyond the direct wage payments to employees are the following associated costs, required by federal labor law:

1. Contributions to social security, services, and relief.
2. Pay for the seventh day of the week.
3. Severance pay equivalent to an extra month's wages per year (as explained below).
4. Twenty days of paid vacation per year in addition to pay for a large number of legal holidays.

These costs are in addition to the minimum wages set by Government commissions. There is also the possibility of compulsory profit sharing in the near future, as established in principle in the 1947 Constitution.

Employer Costs of Social Security, Services, and Relief

Employers in Brazil must pay a much larger percentage of wages in social security to the Government than an employer in the U.S. The employer in Brazil must pay 7% of the employee's monthly wages as his contribution to social security. Although there is a maximum base beyond which this 7% is not paid (three times the minimum wage), for the purposes of this presentation the generalization can be made that for his labor force the employer in Brazil can expect to add 7% of the wages paid.

Employers in Brazilian industry or commerce must contribute another two or three percent to agencies delegated with the development and improvement in working housing, food, and health; and to the organization for worker relief.

Perhaps the round figure of 10% can be used as representative of the employer costs of social security, services and relief in Brazil.

"Sunday Pay" — The normal work week in Brazil at this time is six days. The law requires one day of rest in seven. If an employee works a full week of six days he must be paid for the seventh day. This payment for the seventh day is referred to in Brazil as "Sunday pay" (even though many workers' seventh day is some other day of the week).

One interesting reason for Sunday pay is as an incentive to cut down absenteeism and tardiness. If the worker is tardy he forfeits his Sunday pay. The possibility of loss of Sunday pay is a strong incentive for most workers to be at work consistently and on time.

The employer cost of Sunday pay is about 14% of the labor payroll.

Severance Pay — "Ten Year Law" Severance pay and the "Ten Year Law" have to be considered together in any discussion of severance pay provisions. By federal law in Brazil when an employee has worked for a company for ten years he has reached his "stability" and acquires permanent status. Only because of some serious offense can such an employee be dismissed, and then only after the case has been properly investigated by a competent authority.

A permanent employee may not be dismissed except as indicated. If he leaves by agreement with the company, by law, the company must pay such an employee two months pay for every year of service.

If an employee is dismissed before he reaches "stability" for any but the most serious reasons, properly investigated, the employer must pay such an employee one month's wages for each year of employment.

The problems associated with the Ten Year Law encourage employers to dismiss workers some time before they achieve their stability. In order not to be overtly avoiding the philosophy under which the Ten Year Law was enacted employers try to dismiss such workers sufficient years before ten. The formula applied by employers is to dismiss such employees about the seventh year. Probably the great bulk of the men and women making up the labor force in Brazil become "seven year men" drawing their severance pay of one month's wages for each year of employment.

It is difficult to compute accurately the cost of this provision for severance pay. It probably amount to about 5% in a company which has been in business for many years.

Vacation Pay — For the normal worker in Brazil who has had a year of employment and is regular in his attendance the law requires a 20-day vacation with pay. The law also requires that such a worker be paid for all legal holidays. In Sao Paulo last year there were twelve legal holidays.

Vacation pay and holidays add 10% to the cost of employing labor in Brazil.

Profit Sharing and Christmas Bonus The future of profit-sharing was established in principle in the 1947 Constitution. So far it has not been legally implemented. However, it has become a wide custom here to give a Christmas bonus. The few facts I have available lead me to estimate that the cost of such bonuses amount to approximately one month's wages, or about 8% of an employee's yearly wages.

Minimum Wage Rates — Minimum wage rates are set by Minimum Wage Commissions throughout the various states of Brazil. Minimum wage rates vary from area to area. They are based upon cost-of-living studies and by law must be revised every three years. Probably the impact of the minimum wage rates are much greater in Brazil than in the United States because so many people in the labor force are paid the minimum wage or close to it.

The rates set in Sao Paulo for three periods are as follows: 1951 — 1,190 cruzeiros, 1954 — 2,300 cruzeiros, 1957 — 3,700 cruzeiros. The cruzeiro-dollar exchange rate at this writing is approximately 67 cruzeiros to the dollar. Using this rate the monthly wages of an unskilled worker being paid the minimum wage would be about $45.00. Sunday pay would be included in this figure, but the other costs associated with employment would increase it to approximately $50.00.

Unskilled labor is cheap in Brazil, but it is more costly than the rate per hour (of approximately 22¢) would at first imply. Moreover, things are changing in Brazil. Labor costs are forcing employers to consider more effective utilization of labor-saving devices.

MIGRANT STUDY PLANNED

Readers concerned over the condition of the children of the migrant workers who figure so prominently in our rural landscape will be happy to know that the Center for Sociological Research at Western Michigan University* in Kalamazoo has obtained funds to conduct new studies on the educational levels of these less fortunate youngsters. The grant has been made by the U.S. Department of Health, Education and Welfare. Dr. Jerome Manis will be in charge of the project, which will be carried out with the cooperation of growers in the Van Buren and Berrien County areas.

*Promoted from a College to a University the very hour this paragraph was written. Congratulations.

READ AND APPROVED

Business Topics welcomes a new publication to this campus. *The Centennial Review of Arts and Science* is printed on uncoated stock and clad in a well-designed dignified cover; it is to appear quarterly. In the first issue there is reprinted the symposium, "The New View of Man", which was a notable feature of the MSU Centennial. The initial printing is 1,000 copies at $1 a single issue or $3 a year. Orders may be sent to *The Centennial Review*, 112 Morrill Hall, MSU.

We also note with pleasure a special issue of *The Saturday Review* for January 19, 1957, devoted to Education and U.S. Business and their newsworthy partnership. Appropriately enough, the cover portrait is of Alexander Hamilton, our first Secretary of the Treasury, who combined to a high degree cultural interests and economic talents. An introductory editorial comment states: " . . in this issue we discuss specific ways in which the businessman can benefit, and benefit by, the university in achieving the permanent aspirations of the Republic of which all of us are a part." Among the thoughtful articles are: "The Culture of the Businessman", by Crawford H. Greenewalt, president of E.I. du Pont de Nemours and Company; "New Goals for Business", by H. W. Prentis, Jr., chairman of the board, Armstrong Cork Company; and "Business in Cap and Gown", by Courtney C. Brown, dean of the Graduate School of Business, Columbia University. Single copies are available from Saturday Review, Inc., 25 W. 45th St., New York 36, N.Y., at 25¢ apiece.

THE OTHER TIDAL WAVE

We are constantly being reminded of the coming crisis in public school education; of the tidal wave of youngsters, now in grade school, who will be deluging our institutes of higher learning between now and 1970; of the pressing need to do something about this crisis while there is time. Yet another age group presents a problem as acute and much more depressing. This is the body of people over sixty-five, whose plight should perhaps seem all the more genuine inasmuch as we are all going to share it, at first hand. Youth, whatever the nature of the crisis that confronts it, has a resilience and ingenuity that old age lacks. The solving of its problem of schooling and training is one that we can all take pleasure in to the extent that we take pleasure and pride in youth itself. On the other hand, the extent to which we solve the problems of old age is an accurate measure of the extent to which we are really civilized: a nation cannot expect rewards for caring for the old as it can expect actual economic returns for caring for the young. Only a belief in the essential dignity of man can impel us to enable all to grow old with dignity.

Let us examine to what extent growing old is associated with dignity and security in our own culture. We recall that within the last month many scores of helpless elderly people have died in holocausts of substandard nursing homes. Yet the whole picture is not one of such dramatic horror, rather of confusion and lack of direction on the part of the public, and unease and resentment among the elderly. What is the attitude of those over sixty-five to retirement? Do they consider the late years as "The last of life, for which the first was made?" Quoting Browning's lines to a man suffering from compulsory retirement would not be likely to arouse a response of assent, according to the actual statistics collected from pensioners of various companies.

For the first single comprehensive study of the status of the older population that has been made in twenty-five years, we can turn to *Economic Needs of Older People*,* published last year by the Twentieth Century Fund. It evaluates the whole confusing network of provisions the American people have been weaving for the elderly, and points out— both specifically and in concise statistical tables -- how far short of "security" all the measures have fallen.

This extremely interesting book falls into two parts. The larger consists of a very detailed research survey, as broad in scope as possible. The authors, John J. Corson, formerly Director of the federal Bureau of Old-Age and Survivors Insurance, and John W. McConnell, Professor of Industrial and Labor Relations at the New York State School of Industrial and Labor Relations, Cornell University, have begun by considering the question of why old age presents more of a problem in our present society than it has ever done before. Their answer, while not a simple one, can be briefly stated: there are relatively more elderly than ever before; and our way of living and working makes self-support difficult in old age. Such being the difficulty, what sort of people does the problem of old age involve? To draw up the "Picture of the Aged" that makes up the second chapter, the authors used the results

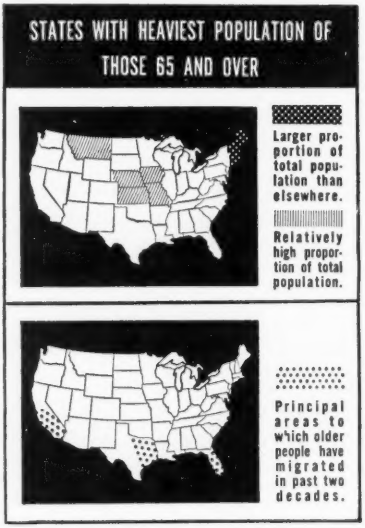
*Corson, John J, and McConnell, John W., *Economic Needs of Older People* (New York: The Twentieth Century Fund, 1956.)

of a questionnaire sent to a random sample of those on the pension rolls of 16 business corporations, two state retirement systems and one international union. The 1,755 answers received were checked against the same questions submitted orally to a small group of pensioners. In addition, a survey of beneficiaries of old-age and survivors insurance provided data on another large body of the elderly. The findings of the two surveys are suggestive, rather than definitive, since no comprehensive data are available. In this volume is to be found the best light we have on the lives of retired workers.

To present complex findings very briefly, it can be said that the life of the elderly is unhappy, and it is poor. It is unhappy in part because over 50% of people over 65 retired for reasons other than their own. It is unhappy because of lack of money (which means, in our society, lack of status): 36% of these old people have no income of their own whatsoever, and another 38% have less than $1,000 a year. Only 15% have $2,000 or more annually. As for the individual's satisfaction in his retirement: of those with less than $1,000 a year, only 38% like their retired status; of those with $1,000 to $2,000, over half like it; of those with more than $5,000, almost three quarters like it.

The accompanying illustration suggests that the elderly would like that spot in the sun they have promised themselves, but that for the most part they do not get it; New England leads the nation in its concentration of older people. Migration to warmer parts does go on, as the other chart shows.

Who are the aged? ask the authors. Statistics show that: the aged are growing older (i.e. more of the already old are living to greater ages); they are predominantly white, predominantly


STATES WITH HEAVIEST POPULATION OF THOSE 65 AND OVER
Larger proportion of total population than elsewhere.
Relatively high proportion of total population.
Principal areas to which older people have migrated in past two decades.

women (the older the group the larger the proportion of females); most of these women are widowed, divorced or single. From one tenth to one third of all of them are chronically ill. No uniformly satisfactory plan for providing for their medical needs has been devised or put into practice.

The economic aspects of old age receive a great deal of attention in this book. Not only the problems of employment and retirement, but savings, insurance, public assistance and pension plans are discussed at considerable length. An important and particularly interesting chapter deals with the political implications of old age, tracing the history of the movment for old-age security from the creation of a Massachusetts commission to study the problem in 1907. The Townsend and California Pension Plans ("Ham'n Eggs", as it was known), and various other state systems come under scrutiny, as do the attitudes of industry,

labor, and the major political parties toward this constantly growing group.

The greater part of the book is devoted to this sort of collecting of historical and economic data on the aged, ending with an estimate of the probable direction of growth of social aids to them: retraining workers in their for- to provide for jobs for years of reduced physical effort; checking health of older workers; encouraging savings and home ownership; assisting in the transition to a new mode of living during retirement.

There follows, in the last forty pages, an evaluation of this report by the Twentieth Century Fund's Committee on the Economic Needs of Older People, with the purpose of recommending ways of enhancing their economic and social security. An interesting aspect of the evaluation is the difference of opinion that arises among the committee members on issue after issue. It is pointed out by more than one of them that there is a great "paucity of verified data concerning many aspects of the problem of old-age security", and that in the absence of such data, recommendations have to be made based upon "beliefs and assumptions rather than tested facts". Such a lack does not, however, reflect upon the findings of the research study, but simply points to the difficulties of a problem as complex as it is urgent. All those associated with this valuable study imply that it is the beginning of an adequate consideration of the problem of old age, rather than a definitive work.

The general reader may find the last section of the book the most interesting, for here a group of picked people, experts in their own fields, are evaluating the research findings, each from a different viewpoint. The group includes a lawyer, a UAW-CIO Consultant on Social Security, the president of an AFL union, a professor of social work, a former head of a Stanford University research institute, and an official of an insurance company. Their free discussion of all facets of the problem, on the basis of specialized experience, emphasizes how far from a solution our society is today.

ANNE C. GARRISON

NORTHWARD HO

Michigan officials certainly get around. The latest far-flung activity that has come to our attention has to do with the state's Department of Insurance. Their examiners travel to the home offices of some nine or ten Canadian life insurance companies to inspect the books. By statute, a Canadian insurance company must name one of the states in which it does business in this country as its Port of Entry. Its records are then open to insurance examiners of that state. More Canadian life insurance companies have chosen Michigan for this purpose than any other state.

COLUMBIUM, THE GEM OF THE OCEAN

As the great powers of the world spar for economic advantage like moose battling in a marsh, we have long cherished a particular daydream. It has to do with the progress of science to the point where some hitherto unexploited metal becomes absolutely essential to the manufacture of some absolutely essential machine or device (nature unspecified). This rare metal we dream about is to be found in only one place in the world: either in a small highly civilized country like Denmark or a small highly uncivilized one like Yemen. In either case we like to imagine the economic half-Nelson this will enable some underdog to get on the rest of the world. Or we might endow the Dalai Lama or the remnants of the Wyandotte Indians with the exclusive possession of the valuable stuff. We make up our dreams as we go along.

The nearest this dream has come to reality (not really very close) is in the case of Columbium, a rare metal which is essential in imparting non-melting and corrosion-resisting characteristics to the alloys used in high-temperature jet engines. It coincides with our fantasy in being found chiefly in Nigeria and Finland, but there is also a commercial quantity of it in South Dakota, which doesn't fit; and the dream is shattered by recent discovery of beds of it in Northern Ontario, where almost anything you want in the way of minerals is likely to turn up.

As for the name, some patriot back in 1802 named a specimen of the rock which bears the ore *Columbite*, after Columbia, meaning the United States. His specimen came from New London, Connecticut. If the jet engine had then been in production, this find might have given the fledgling United States quite an edge in world economy, comparable to Denmark in our daydream.

What experience and history teach is this — that people and governments never have learned anything from history, or acted on principles deduced from it.

George William Hegel, *Philosophy of History*

CURRENT MICHIGAN BUSINESS CONDITIONS

The economic picture for the first quarter of 1957 is one of growing complexity. The fourth quarter boom of 1956 generated a degree of momentum that carried over into the first two months of this year; however, there are indications that a certain amount of this force is diminishing. The tempo of industrial activity appears to have slowed down somewhat and some of the upward surge of the capital goods boom, so important to 1956's economic picture, has slackened. In addition, soft spots are in evidence in certain fields including housing, textiles, and appliances.

Much discussion has been centered around the ubiquitous problem of inflation. Higher prices, a tight money supply, and a rising level of governmental expenditures have been subjects of much discussion intimately related to the problem of inflation. Further concern has been felt as to whether the consuming sector of our economy will again spend in such magnitude as to bring forth another surge in the general economic picture such as this sector caused in 1955 and as capital expenditures provided in 1956.

Nation's Business

Industrial activity showed a tendency to slip slightly from the records set in the latter portion of 1956. The preliminary seasonally adjusted index of industrial production of the Federal Reserve Board was at a level of 146 percent of the 1947-49 level during January. This compares with the 147 all-time record set in December 1956 and the 143 level of January 1956. The general picture for the early part of the year is reminiscent of that of a year ago when a "rolling readjustment" took place during the first portion of the year. It should be pointed out that durables manufacture was the only major area showing an actual drop from December levels. Auto production during January fell short of scheduled production as in November and December and appliance manufacturers have been curtailing output. Steel mills have continued to operate at rates near capacity; however, it is well to note that 1957's rated capacity of about 133.5 million tons of steel is about 5 million tons greater than rated capacity at the beginning of 1956. For certain types of finished steel products, such as structural steel and oil pipes, the supply is still critically behind demand, while in some other types of steel products, the supply situation at present is the best since the 1956 steel strike.

Construction activity, except for the housing sector, has continued into 1957 at a near-record pace. Starts of new dwelling units in January 1957, at a seasonally adjusted annual rate of 1,010,000 units, were running about 15 percent below the level of year ago. This rate was just below the average for the fourth quarter of 1956. Nonresidential construction continues at the high rates of 1956, although there is some indication of a general levelling off in most types of such activity, except public construction, which is expected to continue to advance to higher levels during 1957. The value of new construction in January,

at a seasonally adjusted annual rate of $44.8 billion was quite comparable to the level of December; this level of expenditures is 3 percent over January 1956, but since construction costs increased during 1956 no increase in activity actually took place. Construction contract award data for the early part of this year are at levels slightly above the rates of a year ago, although the increases in construction costs indicate that there is no actual gain in the amount of construction activity to be expected in the immediately forthcoming months compared to 1956.

Total *employment* in the nation declined seasonally about 1.7 million from December, reaching a level of 62,890,000 in January, just about at the same level as a year ago. Unemployment increased to 2.9 million during January and stood at about 4.3 percent of the civilian labor force, virtually the same as a year ago. The employment declines that occurred were due mainly to seasonal layoffs in agriculture, construction and retail trade.

Retail trade, seasonally adjusted, remained at the record level of December, and January figures were about 5 percent above a year ago. Most groups of stores, for which data are presently available, experienced sales above 1956 levels. For the first two months of 1957, department store sales were running about 2 percent above 1956 figures. The rise in retail sales is comparable to the general rise in wage and salary disbursements.

Consumer credit outstanding stood at an estimated $40,916 million at the beginning of February. It should be noted that the amount of credit outstanding, while $3,068 million above the level of a year ago, has been increasing at a decreasing rate.

Wholesale prices continued their upward trend during December and January. The wholesale price index of the Bureau of Labor Statistics reached an all-time monthly record of 116.9 percent of the 1947-49 level during January 1957. The index gave indication of increasing during the first part of February; however, recent indications are that wholesale prices have begun to slip slightly. Such declines have been characteristics of all major sectors of the wholesale price index. In the wholesale price index, both farm products and processed foods in January (the latest data for which figures are available) were about 6 percent over the levels of a year ago. The *consumer price index* of the Bureau of Labor Statistics continued setting new record highs for the fifth successive month, increasing 0.2 percent from December to 118.2 percent of the 1947-49 average during January. The increase over a year ago is more than 3 actual percent. There were slight declines in food and clothing costs during the past two months, but increases in every other sector, including housing, transportation, medical care, and other goods and services more than overcame the slight decreases in food and clothing. Measured by the consumer price index, the purchasing price of the dollar had declined to 85.5 percent of the 1947-49 level during January, compared to the 89.4 percent of the previous year. This gradual erosion of the value of the dollar is an indication of creeping inflation.

Farm prices increased somewhat during both December and January. The index of prices received by farmers stood at 238 percent of the 1910-14 level

in January, compared to 226 percent the previous January. Prices paid by farmers also increased, but not quite as much, relatively. The index of prices paid—including interest, taxes and wages—increased from 260 percent to 269 percent of the 1910-14 level from January 1956 to January 1957. The resulting parity ratio stood at 82 percent during January 1957, up 2 percent over a year ago; however, the parity ratio had reached 86 percent during June 1956. Although farm prices were up, receipts from marketing in January were about the same as a year ago at $2.5 billion, since the volume of marketing was down somewhat.

The *business investment sector,* is providing some cause for a second look, since a few firms have announced postponements of planned projects because of higher costs and difficulties in obtaining necessary funds. It is almost certain, however, that capital expenditures will be at least as great as last year's, but the capital goods sector will hardly create the boom that it caused during 1956.

Governmental spending on all levels is certain to increase during the year and may lead to another surge of inflationary pressure. The increasing governmental expenditures are also taking an ever increasing percentage of our gross national product. Governmental competition for scarce goods and services in a period of otherwise full employment of our resources can only lead to an upward pressure on the price level while continued high levels of taxation serve as a depressing influence on business. A record high federal budget of $71.8 billion proposed for fiscal 1958, an increase of $2.9 billion over the current year's, has been regarded with alarm in many quarters. This additional surge of inflationary pressure creates some conflict with the current credit restricting policies of the Federal Reserve System which have been designed to achieve a measure of economic balance during the present boom.

One partially redeeming feature of the budget is the possible surplus for the third successive year. The assumed budget surplus of $1.8 billion for fiscal 1958 *might* be regarded as somewhat of a deflationary influence; however, there are other aspects to the question worth noting. In part, the surplus is based on increased postal rates (that Congress appears very reluctant to approve) and the assumption that business and the nation's tax base will continue to expand without the stimulus of tax reduction. Beyond this, many economists and governmental leaders are seriously disturbed over the scant size of the surplus that is not increasing along with governmental revenues to lead the way for future tax reductions. Many feel that if a period of booming prosperity can not lead to more substantial surpluses, then the very foundations of our present economic structure are being eroded.

Michigan's Business

Automobile production fell short of schedules during November, December, and January, for one reason or another, although production during January and February was above the figures of a year ago.

Automobile production during February amounted to about 578,000 cars, up 23,000 from 1956. One interesting aspect of the current automotive picture is a somewhat growing resistance to higher prices that is being felt in the medium-priced field. In this regard, Plymouth has, apparently, once more emerged as the third best seller.

The inventory of new cars on hand has been in much better control than last year at this time. On November 1, 1956, the year's low-point of 278,000 was reached at the time new models were beginning to appear. With the introduction of the new models, the inventory level has been gradualy increasing, reaching a total of about 620,000 on February 1, with indications of a slight rise during February. These totals compare favorably with the record 904,000 cars on hand or enroute to dealers on March 1, 1956. An inventory at the 600,000 level is not unwieldly nor exceptionally out of line—providing that the usual upturn in sales occurs during the Spring months.

The industry certainly has benefitted from its production-inventory experiences of last year and is keeping production closely geared to market conditions. Scheduled production of 567,000 cars during March would bring the first quarter production for 1957 at something in excess of 1,800,000 units. This total would make the first quarter of 1957 the second best in the industry's history, exceeded only by the 2,129,018 cars produced during the first quarter of 1955.

The *employment and unemployment* picture throughout the State has shown considerable improvement following the introduction of the 1957 automobiles. Total non-farm employment in the State had grown in mid-December to 2,665,000 which was the high point for 1956. Wage and salaried employment was at 2,429,000 in mid-December, a substantial increase over the year's low in August, 1956, but 59,000 below the figures of the preceding year. Factory employment reached the year's high of 1,120,000 in mid-December compared to the year's low-point of 989,000 in mid-September. The situation was somewhat similar in mid-January 1957, although the usual seasonal decreases in non-manufacturing fields such as construction and retailing had occurred, together with a slight decrease in manufacturing employment. State-wide wage and salaried employment in mid-January totaled 2,380,000 which was 48,000 off from January 1956 and 49,000 off from the December figure. It is worth noting that non-manufacturing employment grew steadily to new records during almost every month of 1956, so that January 1957 non-manufacturing employment at 1,268,000 was 14,000 over a year ago. This general employment picture was quite similar throughout most areas of the State and was expected to remain substantially unchanged through February.

Retail trade at year's end in Michigan did not quite measure up to the record proportions of 1955, although department store sales for the State in December were about 1 percent above a year ago. The picture was not uniform in all areas, with Flint being the most depressed. Total retail trade, as measured by Sales Tax Collections of the Michigan Department of Revenue, was approximately 2 percent off in December 1956 from the year earlier, with the decline not associated with any one particular type of business. Department store sales in the State in January were 2 percent over the previous year, although the Detroit area was principally responsible. Preliminary sales tax collections of the Michigan Department of Revenue also indicate that January business throughout the State was above a year ago.

Banking Activity continued to reflect a similar picture as shown by other indicators. December bank debits in a substantial number of centers failed to reach

the levels of a year ago, with a rather sizeable drop recorded in Lansing. Total activity generally increased in January, although here, again, Flint remained substantially below the year ago rates for the 10th consecutive month. Loans of Michigan banks that are members of the Federal Reserve System continued to grow, especially in the Detroit area. The Detroit banks with loans and discounts of $1,589 millions at the end of January were running 13.1 percent above a year ago; other Lower Peninsula banks that are members of the Federal Reserve System had loans and discounts of $1,214 million at the same time, up 6.9 percent over a year ago, although the Detroit banks had demand deposits of $2,569 million, down 5.3 percent from a year ago, contrasted to the outstate Lower Peninsula banks with $1,392 million, up 0.8 percent over a year ago.

Bank Debits

City	Bank Debits (Thousands of $'s)			Percent Change from Previous Year		
	Nov. '56	Dec. '56	Jan. '57	Nov. '56	Dec. '56	Jan. '57
Adrian	26,688	28,729	30,141	+13.4	+ 5.2	+15.1
Battle Creek	70,822	74,609	75,665	+ 3.2	— 4.6	+ 4.8
Bay City	54,938	57,801	59,298	+10.6	+ 1.6	+12.9
Detroit	6,509,533	6,971,911	7,253,922	— 0.9	+ 1.9	+ 6.6
Flint	161,600	181,633	166,718	— 8.5	— 7.6	— 9.5
Grand Rapids	330,853	339,490	347,120	+ 5.7	+ 2.5	+ 4.6
Jackson	95,822	97,859	103,546	+ 4.0	— 7.6	+ 0.1
Kalamazoo	146,084	163,054	163,434	+10.8	+ 1.8	+14.3
Lansing	155,370	150,553	155,193	+ 5.1	—13.4	- 1.8
Muskegon	86,852	91,467	98,583	+13.7	— 3.3	+11.8
Pontiac	87,445	90,706	88,791	+ 9.2	+ 0.7	+11.9
Port Huron	41,343	44,514	44,540	+ 4.5	— 6.1	+ 4.6
Saginaw	125,448	138,209	129,307	+ 4.0	— 0.0*	+ 8.8
Escanaba	11,742	13,039	12,760	+16.0	+15.9	+ 5.3
Marquette	14,312	14,493	13,628	+23.4	+24.2	+ 4.5
Sault Ste. Marie	10,137	10,874	10,799	— 3.6	— 6.1	— 5.6

*Decrease less than 0.1 percent
Sources: Federal Reserve Banks of Chicago and Minneapolis and Board of Governors of the Federal Reserve System

Department Store Sales

City	November '56 Percent Change from		December '56 Percent Change from		January '57 Percent Change from	
	Oct. '56	Nov. '55	Nov. '56	Dec. '55	Dec. '56	Jan. '56
Battle Creek	+18	+11	+34	— 1	—59	— 1
*Detroit	+27	+ 8	+27	+ 2	—58	+ 4
*Flint	+18	— 8	+41	— 9	—62	—11
*Grand Rapids	+23	— 4	+46	— 5	—59	— 5
*Jackson	+21	+ 8	+47	+ 3	—65	— 6
*Kalamazoo	+30	+10	+43	+ 2	—65	— 1
*Lansing	+30	+ 1	+49	— 1	—62	— 4
Muskegon	+12	+10	+50	— 4	—61	+ 2
Port Huron	+31	+13	+47	+ 9	—68	+ 9
*Saginaw	+20	+ 3	+26	0	—57	— 2

*Metropolitan Areas
Source: Federal Reserve Bank of Chicago

Motor Vehicle Factory Sales from Plants in U. S.

	Factory Sales			Percent Change from Previous Year		
	Nov. '56	Dec. '56	Jan. '57	Nov. '56	Dec. '56	Jan. '57
Passenger Cars	576,708	617,599	628,045	—22.7	—11.2	+6.3
Motor Trucks and Buses	90,479*	83,141	91,377	—21.2	—20.1	—7.9

*Corrected figure
Source: Automobile Manufacturers Association

Electric Sales in Kilowatt Hours

	Thousands of KWH Sales			Percent Change from Previous Year		
	Oct. '56	Nov. '56	Dec. '56	Oct. '56	Nov. '56	Dec. '56
Residential	524,609	543,790	608,564	+ 9.4	+ 5.8	+ 8.2
Commercial	314,921	322,045	342,386	+ 2.4	+ 1.6	+10.0
Industrial	956,056	961,385	928,942	+ 5.6	+ 0.7	— 1.0

Source: Edison Electric Institute

Non-Farm Employment[1]

	State of Michigan	Detroit Met. Area	Flint	Grand Rapids	Lansing	Saginaw	Upper Peninsula
November 15, 1956	2,656,000	1,449,000	144,400	131,400	79,800	63,000	83,300
December 15, 1956	2,665,000	1,455,000	148,300	131,300	81,600	63,600	81,100
January 15, 1957	2,616,000	1,431,000	145,300	128,300	79,900	62,300	79,200
Percent change from Year Ago:							
November 15, 1956	— 2.3	— 2.6	[2]	— 0.3	— 4.1	— 3.1	[2]
December 15, 1956	— 2.1	— 2.1	[2]	— 1.6	— 2.4	— 3.0	[2]
January 15, 1957	— 1.7	— 1.5	[2]	— 1.6	— 1.6	— 3.3	[2]

Total Unemployment[1]

November 15, 1956	135,000	81,000	3,700	5,100	3,000	1,900	5,600
December 15, 1956	142,000	83,000	3,500	6,000	2,500	1,800	7,100
January 15, 1957	162,000	91,000	4,600	7,500	3,000	2,300	8,300
Percent Change from Year Ago:							
November 15, 1956	+101.5	+131.4	[2]	+142.9	+100.0	+111.1	[2]
December 15, 1956	+ 71.1	+ 84.4	[2]	+160.9	+ 56.2	+ 63.6	[2]
January 15, 1957	+ 45.9	+ 51.7	[2]	+141.9	+ 42.9	+ 43.8	[2]

[1]Labor force estimates from May 15 on have been recently revised by the Michigan Employment Security Commission on the basis of recently developed benchmarks. Revisions where necessary, have made back to January 1949 by the commission. These estimates are not necessarily comparable with the labor force information given earlier by this agency.

[2]Revised labor force estimates for Flint and the Upper Peninsula have not been made available at the time of this writing for the period prior to May 15, 1956.

Source: Michigan Employment Security Commission.

MARVIN HOFFMAN

UNIQUE TOURIST AND RESORT INSTITUTE SCHEDULED

Owners and managers of businesses serving our great tourist and resort industry in Michigan will have an opportunity to go back to school. The fifth annual tourist and resort institute is to be held in Kellogg Center on April 8-10. Professional instruction will be given in many phases of planning and operating resorts, cottages, motels, and food services. Vital subjects to be offered include guest hospitality, reservations and deposits, landscaping and outdoor lighting, planning new resorts and motels, guest entertainment, boat laws, innkeeper's laws, selecting furnishings, menu planning, vegetable and meat cookery, sanitation and many others.

Information is available from Tourist and Resort Service, Kellogg Center or from your county extension agent.

MSU Student Insurance Plan

This institution is not invariably the "greatest" or the "first" or the "most" in every category, but it would be unbecoming of us not to point out those occasions when it is so. MSU is first in offering to its student body a comprehensive life and health insurance plan. The project was largely drawn up and is at present being administered as a student project: students in insurance courses were of great help in preparing the project, and it is administrated through Student Government.

The program was launched last spring by the staging of a referendum of the student body to see whether such a plan would be acceptable. An 8 to 1 favorable vote encouraged Student Government to go ahead, and bids were invited from a number of life insurance companies.

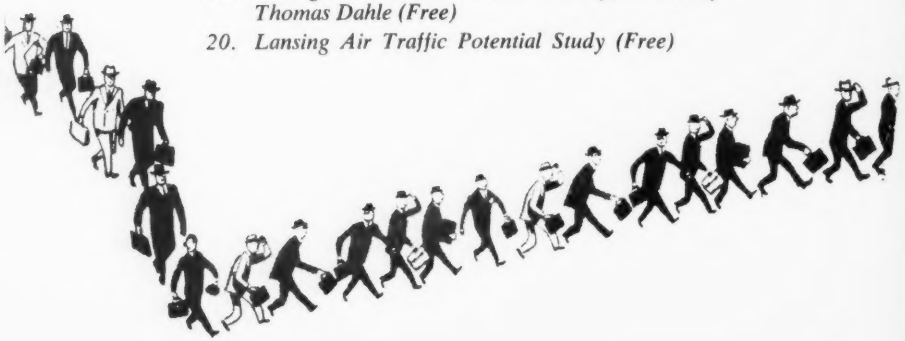
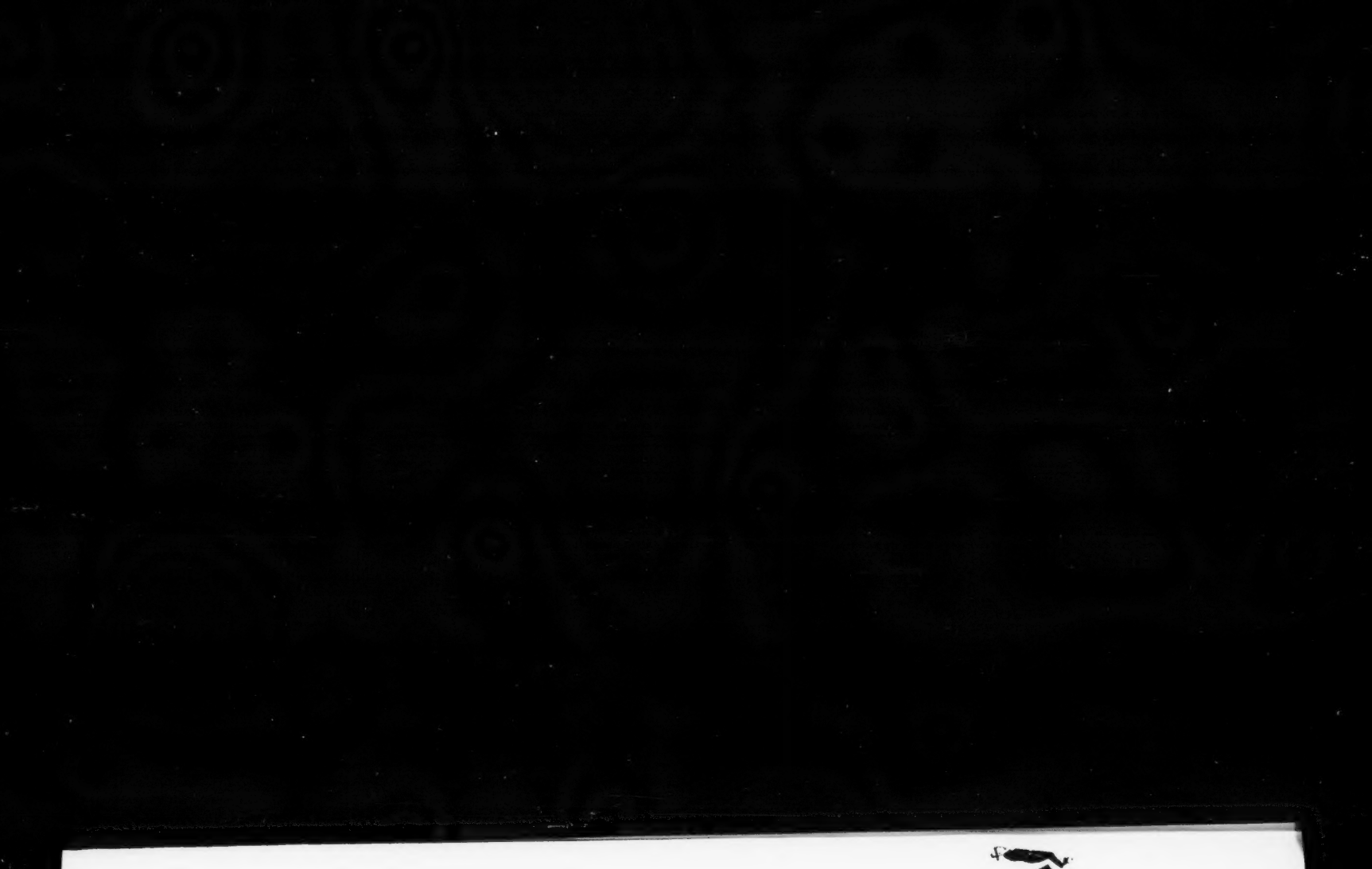
In drawing up the plan, the insurance committee consulted with many other major institutions about the features of their own health plans. It was found possible to make MSU's plan a most liberal one as compared to other places. The student pays $8.50 a year on a 12-month coverage basis, and has a choice of any hospital anywhere, though the first-class health facilities on the campus will of course continue to be chiefly drawn upon. The benefits cover even flight training for air cadets. $2,000 is paid for accidental death, and this, as well as the surgical, medical and other benefits, is paid regardless of other coverage that may be held. The plan is entirely voluntary. In this, its first year of operation, some 8,000 students, or close to half the student body, elected to buy this coverage, thus not only acquiring valuable protection but learning a valuable lesson in foresight and thrift.

BUSINESS RESEARCH PUBLICATIONS

The Bureau of Business Research was established in 1951 to assist the Michigan State University faculty in conducting economic and business research and to serve Michigan business with information and studies. The studies are usually published, and those currently available are listed below. Inquiries should be addressed to the Bureau's director. Where applicable, draw checks payable to Michigan State University.

RESEARCH REPORTS

12. *Taxation of Mobile Homes ($1.00)*
13. *Wages, Hours, and Fringe Benefits in Member Stores of the Michigan Retail Hardware Association ($1.00)*
14. *Michigan County Market Data (Free)*

15. *Michigan Statistical Abstract ($3.00)*
A handy compilation of the most recent statistics on Michigan and its subdivisions. Ten major classifications of data, 179 pages, concerning the economic, social and physical aspects.

16. *Retail Sales in Detroit During December 1955 Newspaper Strike (Free)*
18. *Motels and Hotels from the Guests' Viewpoint (Grand Rapids Survey) ($2.00)*
19. *Michigan State Park Users' Survey, 1956, by Thomas Dahle (Free)*
20. *Lansing Air Traffic Potential Study (Free)*